

# AFPC Rock Check Program

Sample No. 2008-08

	Method #	# of Anal.	Grand Median	Std Dev
<b>Moisture</b>				
Ground Sample AFPC 9-2	101	15	0.24	0.063
Other (describe)	102	5	0.24	0.496
Method Group 100		20	0.24	0.08
<b>BPL or P<sub>2</sub>O<sub>5</sub></b>				
Gravimetric AFPC 9-5	201	2	29.56	0.017
ICP-induced coupled plasma	202	3	29.60	0.091
Photometric-AFPC 9-6	203	9	29.39	0.381
Automated -AOAC 978.01-15th	204	7	29.36	0.185
Other(describe)	205	5	29.67	0.086
Method Group 200		26	29.54	0.25
<b>BPL or P<sub>2</sub>O<sub>5</sub> (on Dry Basis)</b>				
Gravimetric AFPC 9-5	211	2	29.60	0.010
ICP-induced coupled plasma	212	3	29.66	0.092
Photometric-AFPC 9-6	213	5	29.27	0.292
Automated -AOAC 978.01-15th	214	6	29.49	0.157
Other(describe)	215	4	29.79	0.150
Method Group 210		20	29.61	0.18
<b>Fe<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-12,13	301	4	0.69	0.123
ICP-induced coupled plasma	302	18	0.71	0.030
Other(describe)	303			
Method Group 300		22	0.71	0.04
<b>Al<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-16,17	401	3	0.42	0.224
ICP-induced coupled plasma	402	18	0.43	0.031
Other(describe)	403			
Method Group 400		21	0.43	0.03
<b>MgO</b>				
Atomic Absorption-AFPC 9-18,19	501	5	0.58	0.015
ICP-induced coupled plasma	502	16	0.62	0.044
Other(describe)	503	1	0.76	0.000
Method Group 500		22	0.61	0.04
<b>Acid Insoluble</b>				
Insoluble-AFPC 9-8	601	16	11.61	0.183
Other(describe)	602			
Method Group 600		16	11.61	0.18
<b>CaO</b>				
Gravimetric sulfate	701	2	46.55	0.091
ICP-induced coupled plasma	702	6	46.55	0.519
Ceric Sulfate volumetric	703			
Permanganate	704	6	45.46	2.119
EDTA Volumetric	705	2	47.64	1.854
Other(describe)	706	6	46.72	0.495
Method Group 700		22	46.53	0.60
<b>CaO (on Dry Basis)</b>				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	5	46.62	0.554
Ceric Sulfate volumetric	713			
Permanganate	714	4	44.33	1.347
EDTA Volumetric	715	1	50.28	0.000
Other(describe)	716	6	46.78	0.488
Method Group 710		19	46.70	0.52

	Method #	# of Anal.	Grand Median	Std Dev
<b>Fluorine, F</b>				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	14	3.47	0.251
Other (describe)	803			
Method Group 800		14	3.47	0.25
<b>Arsenic, As</b>				
Atomic Absorption	911			
ICP-induced coupled plasma	912	4	15.0	4.58
Other(describe)	913	2	12.2	2.01
Method Group 900		6	14.5	3.81
<b>Cadmium, Cd</b>				
Atomic Absorption	921	1	32	0.0
ICP-induced coupled plasma	922	5	33	1.5
Other(describe)	923	1	38	0.0
Method Group 910		7	33	2.1
<b>Cobalt, Co</b>				
Atomic Absorption	931			
ICP-induced coupled plasma	932	3	2	0.6
Other(describe)	933	1	2	0.0
Method Group 920		4	2	0.4
<b>Mercury, Hg</b>				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943	1	0.1	0.00
Method Group 930		1	0.1	0.00
<b>Molybdenum, Mo</b>				
Atomic Absorption	951			
ICP-induced coupled plasma	952	3	9	0.1
Other(describe)	953	1	10	0.0
Method Group 940		4	9	0.2
<b>Nickel, Ni</b>				
Atomic Absorption	961	1	16	0.0
ICP-induced coupled plasma	962	3	20	0.4
Other(describe)	963	1	26	0.0
Method Group 950		5	20	0.7
<b>Lead, Pb</b>				
Atomic Absorption	971	1	4	0.0
ICP-induced coupled plasma	972	2	6	0.7
Other(describe)	973	1	4	0.0
Method Group 960		4	5	1.2
<b>Selenium, Se</b>				
Atomic Absorption	981			
ICP-induced coupled plasma	982	1	3	0.0
Other(describe)	983	1	4	0.0
Method Group 970		2	4	0.4
<b>Zinc, Zn</b>				
Atomic Absorption	991	2	308	9
ICP-induced coupled plasma	992	5	312	6
Other(describe)	993	1	363	0
Method Group 980		8	313	19

101 Ground Sample AFPC 9-2			
Lab	%	H <sub>2</sub> O	
30	0.81		-8.986
13	0.35		-1.734
13	0.32		-1.261
35	0.31		-1.104
Std Dev	0.30		-1.000
24	0.29		-0.788
24	0.29		-0.709
16	0.28		-0.631
10	0.24		0.000
10	0.24		0.000
Median	0.24		0.000
16	0.22		0.315
49	0.22		0.315
6	0.21		0.473
51	0.19		0.788
Std Dev	0.18		1.000
15	0.15		1.419
15	0.15		1.498

102 Other (describe)			
Lab	%	H <sub>2</sub> O	
9	0.88		-1.290
9	0.80		-1.128
Std Dev	0.74		-1.000
55	0.24		0.000
Median	0.24		0.000
55	0.14		0.212
241	0.13		0.222

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
241	29.58		-1.340
Std Dev	29.57		-1.000
Median	29.56		0.000
Std Dev	29.54		1.000
51	29.54		1.340

202 ICP-induced coupled plasma			
Lab	%	P2O5	
10	29.82		-2.407
Std Dev	29.69		-1.000
6	29.60		0.000

Median	29.60		0.000
10	29.58		0.273

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
6	29.70		-0.815
60	29.65		-0.683
16	29.54		-0.394
16	29.41		-0.039
270	29.39		0.000
Median	29.39		0.000
244	29.19		0.539
30	29.03		0.946
Std Dev	29.01		1.000
9	28.84		1.445
9	28.76		1.655

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
15	29.61		-1.326
15	29.59		-1.245
Std Dev	29.54		-1.000
24	29.45		-0.460
24	29.36		0.000
Median	29.36		0.000
13	29.28		0.433
21	29.26		0.541
Std Dev	29.18		1.000
13	29.10		1.408

205 Other(describe)			
Lab	%	P2O5	
35	30.05		-4.486
55	29.78		-1.282
Std Dev	29.75		-1.000
55	29.67		0.000
Median	29.67		0.000
49	29.66		0.058
Std Dev	29.58		1.000
51	29.41		3.030

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
241	29.62		-1.340

Std Dev	29.62		-1.000
Median	29.60		0.000
Std Dev	29.59		1.000
51	29.59		1.340

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	29.89		-2.504
Std Dev	29.75		-1.000
6	29.66		0.000
Median	29.66		0.000
10	29.65		0.176

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
16	29.61		-1.157
Std Dev	29.56		-1.000
16	29.49		-0.755
30	29.27		0.000
Median	29.27		0.000
9	29.10		0.585
9	28.99		0.942

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
15	29.65		-1.024
Std Dev	29.64		-1.000
15	29.63		-0.937
24	29.53		-0.276
Median	29.49		0.000
24	29.44		0.276
13	29.38		0.665
Std Dev	29.33		1.000
13	29.19		1.872

215 Other(describe)			
Lab	%	P2O5	dB
35	30.14		-2.389
Std Dev	29.94		-1.000
55	29.85		-0.405
Median	29.79		0.000
49	29.73		0.405
55	29.71		0.541

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
30	1.12		-3.472
Std Dev	0.82		-1.000
241	0.72		-0.223
Median	0.69		0.000
60	0.67		0.223
51	0.63		0.548

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
9	0.99		-9.296
9	0.95		-7.956
35	0.83		-3.936
13	0.75		-1.256
Std Dev	0.74		-1.000
10	0.73		-0.586
10	0.73		-0.586
13	0.73		-0.586
16	0.73		-0.419
16	0.73		-0.419
Median	0.71		0.000
49	0.70		0.419
51	0.70		0.586
6	0.69		0.754
15	0.69		0.754
15	0.69		0.754
Std Dev	0.68		1.000
24	0.67		1.591
24	0.66		1.926
270	0.62		3.099
21	0.56		5.109

303 Other(describe)			
Lab	%	Fe2O3	
Median	0.00		0.000

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
30	1.02		-2.680
Std Dev	0.64		-1.000
51	0.42		0.000
241	0.42		0.000
Median	0.42		0.000

402 ICP-induced coupled plasma			
Lab	%	Al <sub>2</sub> O <sub>3</sub>	
9	1.08		-21.115
9	1.05		-20.141
<b>Std Dev</b>	<b>0.46</b>		<b>-1.000</b>
13	0.46		-0.975
35	0.46		-0.975
51	0.46		-0.812
24	0.44		-0.325
270	0.44		-0.325
24	0.44		-0.162
10	0.43		0.000
10	0.43		0.000
13	0.43		0.000
<b>Median</b>	<b>0.43</b>		<b>0.000</b>
16	0.41		0.650
21	0.41		0.650
49	0.41		0.650
16	0.41		0.812
15	0.40		0.975
<b>Std Dev</b>	<b>0.40</b>		<b>1.000</b>
15	0.40		1.137
6	0.37		1.949

403 Other(describe)			
Lab	%	Al <sub>2</sub> O <sub>3</sub>	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
51	0.67		-5.695
35	0.60		-1.340
<b>Std Dev</b>	<b>0.59</b>		<b>-1.000</b>
60	0.58		0.000
241	0.58		0.000
<b>Median</b>	<b>0.58</b>		<b>0.000</b>
<b>Std Dev</b>	<b>0.57</b>		<b>1.000</b>
30	0.49		6.030

502 ICP-induced coupled plasma			
Lab	%	MgO	
10	0.63		-0.228
15	0.63		-0.228

49	0.63		-0.228
10	0.63		-0.114
6	0.62		0.000
13	0.62		0.000
15	0.62		0.000
16	0.62		0.000
16	0.62		0.000
<b>Median</b>	<b>0.62</b>		<b>0.000</b>
51	0.60		0.456
13	0.58		0.912
<b>Std Dev</b>	<b>0.58</b>		<b>1.000</b>
24	0.57		1.254
24	0.56		1.483
21	0.52		2.395
9	0.51		2.509
9	0.51		2.509

503 Other(describe)			
Lab	%	MgO	
270	0.76		0.000
<b>Median</b>	<b>0.76</b>		<b>0.000</b>

601 Insoluble-AFPC 9-8			
Lab	%	Al	
9	12.13		-2.858
9	12.04		-2.366
35	11.90		-1.600
51	11.85		-1.326
<b>Std Dev</b>	<b>11.79</b>		<b>-1.000</b>
16	11.79		-0.998
16	11.75		-0.779
10	11.67		-0.342
24	11.62		-0.041
<b>Median</b>	<b>11.61</b>		<b>0.000</b>
13	11.60		0.041
24	11.59		0.096
10	11.58		0.150
15	11.57		0.205
13	11.53		0.424
6	11.50		0.588
<b>Std Dev</b>	<b>11.42</b>		<b>1.000</b>
15	11.40		1.162
30	11.22		2.119

602 Other(describe)			
Lab	%	Al	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

701 Gravimetric sulfate			
Lab	%	CaO	
55	46.67		-1.340
<b>Std Dev</b>	<b>46.64</b>		<b>-1.000</b>
<b>Median</b>	<b>46.55</b>		<b>0.000</b>
<b>Std Dev</b>	<b>46.46</b>		<b>1.000</b>
55	46.43		1.340

702 ICP-induced coupled plasma			
Lab	%	CaO	
10	46.83		-0.525
49	46.75		-0.381
6	46.60		-0.092
<b>Median</b>	<b>46.55</b>		<b>0.000</b>
10	46.51		0.092
<b>Std Dev</b>	<b>46.03</b>		<b>1.000</b>
16	45.86		1.345
16	45.76		1.528

703 Ceric Sulfate volumetric			
Lab	%	CaO	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

704 Permanganate			
Lab	%	CaO	
51	46.69		-0.580
60	46.55		-0.514
21	46.28		-0.387
<b>Median</b>	<b>45.46</b>		<b>0.000</b>
30	44.64		0.387
<b>Std Dev</b>	<b>43.34</b>		<b>1.000</b>
9	43.31		1.014
9	43.21		1.062

705 EDTA Volumetric			
Lab	%	CaO	
35	50.12		-1.340
<b>Std Dev</b>	<b>49.49</b>		<b>-1.000</b>
<b>Median</b>	<b>47.64</b>		<b>0.000</b>
<b>Std Dev</b>	<b>45.78</b>		<b>1.000</b>

270 45.15 1.340

706 Other(describe)			
Lab	%	CaO	
24	47.34		-1.252
24	47.22		-1.009
<b>Std Dev</b>	<b>47.21</b>		<b>-1.000</b>
15	46.76		-0.091
<b>Median</b>	<b>46.72</b>		<b>0.000</b>
15	46.67		0.091
13	46.36		0.717
<b>Std Dev</b>	<b>46.22</b>		<b>1.000</b>
13	46.18		1.080

711 Gravimetric sulfate			
Lab	%	CaO	dB
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
10	46.94		-0.579
6	46.70		-0.147
10	46.62		0.000
<b>Median</b>	<b>46.62</b>		<b>0.000</b>
<b>Std Dev</b>	<b>46.06</b>		<b>1.000</b>
16	45.96		1.193
16	45.89		1.315

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

714 Permanganate			
Lab	%	CaO	dB
51	46.78		-1.816
<b>Std Dev</b>	<b>45.68</b>		<b>-1.000</b>
30	45.00		-0.499
<b>Median</b>	<b>44.33</b>		<b>0.000</b>
9	43.66		0.499
9	43.59		0.548

715 EDTA Volumetric			
Lab	%	CaO	dB
35	50.28		0.000

Median 50.28 0.000

716 Other(describe)			
Lab	%	CaO	dB
24	47.47		-1.405
24	47.35		-1.163
Std Dev	47.27		-1.000
15	46.83		-0.090
Median	46.78		0.000
15	46.74		0.090
13	46.51		0.563
13	46.34		0.904

801 Volumetric-AFPC 9-37			
Lab	%	Fluorine, F	
Median	0.00		0.000

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
49	3.60		-0.518
9	3.54		-0.279
30	3.54		-0.279
24	3.52		-0.179
9	3.51		-0.159
51	3.50		-0.100
24	3.49		-0.080
Median	3.47		0.000
13	3.45		0.080
13	3.44		0.120
6	3.29		0.717
Std Dev	3.22		1.000
15	3.14		1.315
15	3.14		1.315
270	2.93		2.152
35	2.41		4.224

803 Other( describe)			
Lab	%	Fluorine, F	
Median	0.00		0.000

911 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Arsenic, As	
Median	0.0		0.000

912 ICP-induced coupled plasma			
Lab	ppm	Arsenic, As	
6	19.0		-0.874
270	16.0		-0.219
Median	15.0		0.000
24	14.0		0.219
Std Dev	10.4		1.000
21	0.5		3.174

913 Other(describe)			
Lab	ppm	Arsenic, As	
13	14.9		-1.340
Std Dev	14.2		-1.000
Median	12.2		0.000
Std Dev	10.2		1.000
51	9.5		1.340

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	32		0.000
Median	32		0.000

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
51	35		-1.340
Std Dev	34		-1.000
6	34		-0.670
24	33		0.000
Median	33		0.000
24	32		0.670
Std Dev	32		1.000
270	30		2.010

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	38		0.000
Median	38		0.000

931 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Cobalt, Co	
Median	0		0.000

932 ICP-induced coupled plasma			
Lab	ppm	Cobalt, Co	

270	3		-1.892
Std Dev	2		-1.000
6	2		0.000
Median	2		0.000
51	1		0.788

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	2		0.000
Median	2		0.000

941 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Mercury, Hg	
Median	0.0		0.000

942 ICP-induced coupled plasma			
Lab	ppm	Mercury, Hg	
Median	0.0		0.000

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	0.1		0.000
Median	0.1		0.000

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Molybdenum, Mo	
Median	0		0.000

952 ICP-induced coupled plasma			
Lab	ppm	Molybdenum, Mo	
6	9		0.000
270	9		0.000
Median	9		0.000
Std Dev	9		1.000
24	9		2.680

953 Other(describe)			
Lab	ppm	Molybdenum, Mo	
13	10		0.000
Median	10		0.000

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
51	16		0.000

Median 16 0.000

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
270	21		-2.680
Std Dev	20		-1.000
6	20		0.000
51	20		0.000
Median	20		0.000

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	26		0.000
Median	26		0.000

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
51	4		0.000
Median	4		0.000

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
6	7		-1.340
Std Dev	7		-1.000
Median	6		0.000
Std Dev	5		1.000
270	5		1.340

973 Other(describe)			
Lab	ppm	Lead, Pb	
13	4		0.000
Median	4		0.000

981 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Selenium, Se	
Median	0		0.000

982 ICP-induced coupled plasma			
Lab	ppm	Selenium, Se	
270	3		0.000
Median	3		0.000

983 Other(describe)			
Lab	ppm	Selenium, Se	

13	4	0.000
Median	4	0.000

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	320	-1.340
Std Dev	317	-1.000
Median	308	0.000
Std Dev	299	1.000
51	296	1.340

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
270	472	-28.676
Std Dev	317	-1.000
6	315	-0.625
24	312	0.000
Median	312	0.000
24	308	0.715
Std Dev	306	1.000
51	297	2.680

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	363	0.000
Median	363	0.000

